

AMBIENT AIR POLLUTION AND ITS INFLUENCE TO THE CARDIOVASCULAR SYSTEM DISEASE IN ULAANBAATAR CAPITAL CITY OF MONGOLIA

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Background and Aims: Air pollution is an increasingly serious problem in Mongolia, especially in the capital city of Ulaanbaatar, Darhan and several other urban areas. The purpose of this study is to determine the relationships between air pollutants (PM₁₀, PM_{2.5}, NO₂ and SO₂) and meteorological parameters (average temperature, humidity, and wind speed) cardiovascular morbidity of all secondary level and tertiary level hospitals of Ulaanbaatar and 8 primary level hospitals.

Methods: This is a cross sectional study using secondary air quality and hospital morbidity and mortality data.

Results: The daily concentrations of PM₁₀, PM_{2.5}, SO₂ and NO₂ had exceeded the MNAAQS mainly in the winter months from November to February. The correlation mainly between cardiovascular disease case admissions with meteorological parameters is because the cold winter conditions and excessive ambient air pollution due to burning raw coal in Ulaanbaatar result in the accumulation of pollutants in the atmosphere. Thus, population exposure to air pollution is increase significantly during winter months. Based on resent study result, during winter 1/3 of cardiovascular system disease admission cases were caused due to average temperature, relative humidity, NO₂, and PM₁₀ and cardiovascular disease also caused due to relative humidity, NO₂, and PM₁₀ level.

Conclusions: So thus, not only fuel based pollutants but also vehicle related pollutants and meteorological conditions also causing onset of cardiovascular system disease. Cardiovascular disease admission more registered among older age group of people. In addition, residents of ger area are more visited to the FGPs than the residents of apartment area. For the chronic cardiovascular disease admission, the highest effects of exposure to the air pollution (PM_{2.5} and PM₁₀ level) were observed at the second and fourth days of exposure. PM_{2.5} exposure for cardiovascular system chronic disease admission was significantly higher than the PM₁₀ level.

Keywords : air pollution, Mongolia, hospital admission, cardiovascular system disease